CHAPTER 6

FUTURE DIRECTIONS IN THE PICKWICK LAKE RIVER WATERSHED

6.1. BACKGROUND.

The Watershed Water Quality Management Plan serves as a comprehensive inventory of resources and stressors in the watershed, a recommendation for control measures, and a guide for planning activities in the next five-year watershed cycle and beyond. Water quality improvement will be a result of implementing both regulatory and nonregulatory programs.

In addition to the NPDES program, some state and federal regulations, such as the TMDL and ARAP programs, address point and nonpoint issues. Construction and MS4 stormwater rules (implemented under the NPDES program) are transitioning from Phase 1 to Phase 2. More information on stormwatrer rules may be found at: http://www.state.tn.us/environment/wpc/stormh2o/MS4.htm.

This Chapter addresses point and nonpoint source approaches to water quality problems in the Pickwick Lake Watershed as well as specific NPDES permittee information.

6.2. COMMENTS FROM PUBLIC MEETINGS. Watershed meetings are open to the public, and most meetings were represented by citizens who live in the watershed, NPDES permitees, business people, farmers, and local river conservation interests. Locations for meetings were frequently chosen after consulting with people who live and work in the watershed. Everyone with an interest in clean water is encouraged to be a part of the public meeting process. The times and locations of watershed meetings are posted at: http://www.state.tn.us/environment/wpc/public.htm.

6.2.A. Year 1 Public Meeting. The first Pickwick Lake Watershed public meeting was held April 16, 1997 in Pulaski. The goals of the meeting were to 1)present, and review the objectives of, the Watershed Approach, 2)introduce local, state, and federal agency and nongovernment organization partners, 3)review water quality monitoring strategies, and 4)solicit input from the public.

Major Concerns/Comments

- Effects of the Watershed Approach (cycle) on permit holders
- Nonpoint sources of pollution
- Water quality modeling not available to permitees
- The effect of naturally high phosphate in local streams on permit limits
- Sediment getting into streams

6.2.B. Year 3 Public Meeting. The second Pickwick Lake Watershed public meeting was held October 26, 1999 at the courthouse in Winchester. The goals of the meeting were to 1)provide an overview of the watershed approach, 2)review the monitoring strategy, 3)summarize the most recent water quality assessment, 4)discuss the TMDL schedule and citizens' role in commenting on draft TMDLs, and 5)discuss BMPs and other nonpoint source tools available through the Tennessee Department of Agriculture 319 Program and NRCS conservation assistance programs.

6.2.C. Year 5 Public Meeting. The third scheduled Pickwick Lake Watershed public meeting was held October 30, 2003 at the Columbia State Community College-Lawrenceburg Campus (the meeting was for the Pickwick Lake and Wheeler Lake Watersheds). The meeting featured six educational components:

- Overview of draft Watershed Water Quality Management Plan slide show
- Benthic macroinvertebrate samples and interpretation
- SmartBoard™ with interactive GIS maps
- "How We Monitor Streams" self-guided slide show
- "Why We Do Biological Sampling" self-guided slide show
- Tennessee Valley Authority display

In addition, citizens had the opportunity to make formal comments on the draft Watershed Water Quality Management Plan and to rate the effectiveness of the meeting.

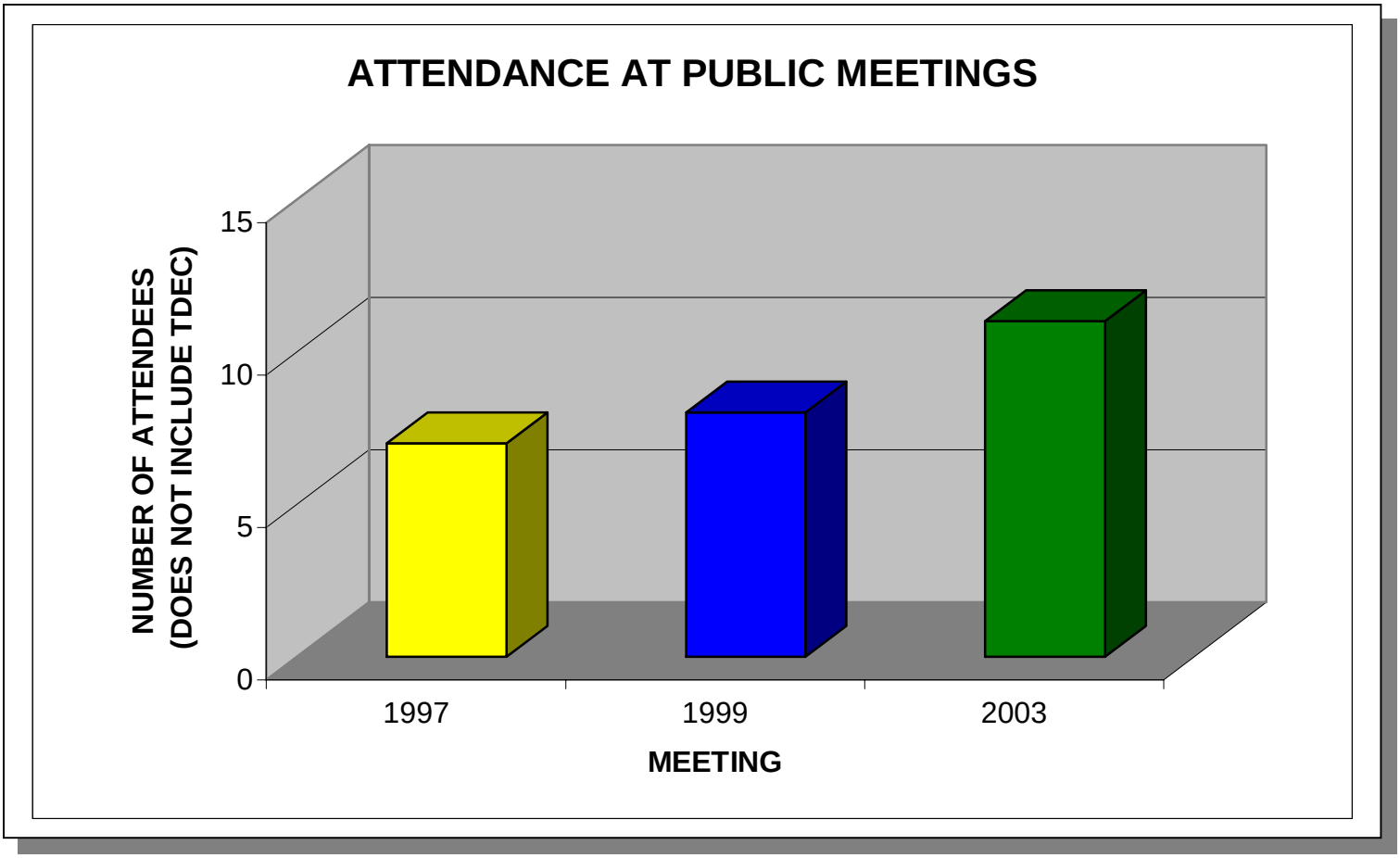

Figure 6-1. Attendance at Public Meetings in the Pickwick Lake Watershed. *The 1997 and 1999 watershed meeting numbers represent Pickwick Lake, Wheeler Lake, Lower Elk River, and Upper Elk River Watershed joint meetings.*

Figure 6-2. Watershed meetings begin with an educational slide program about the watershed and a review of the draft Watershed Water Quality Management Plan.

6.3. APPROACHES USED.

6.3.A. Point Sources. Point source contributions to stream impairment are primarily addressed by NPDES and ARAP permit requirements and compliance with the terms of the permits. Notices of NPDES and ARAP draft permits available for public comment can be viewed at http://www.state.tn.us/environment/wpc/wpcppo/. Discharge monitoring data submitted by NPDES-permitted facilities may be viewed at http://www.epa.gov/enviro/html/pcs/pcs_query_java.html.

The purpose of the TMDL program is to identify remaining sources of pollution and allocate pollution control needs in places where water quality goals are still not being achieved. TMDL studies are tools that allow for a better understanding of load reductions necessary for impaired streams to return to compliance with water quality standards. More information about Tennessee's TMDL program may be found at:
http://www.state.tn.us/environment/wpc/tmdl.php

TMDLs are prioritized for development based on many factors.

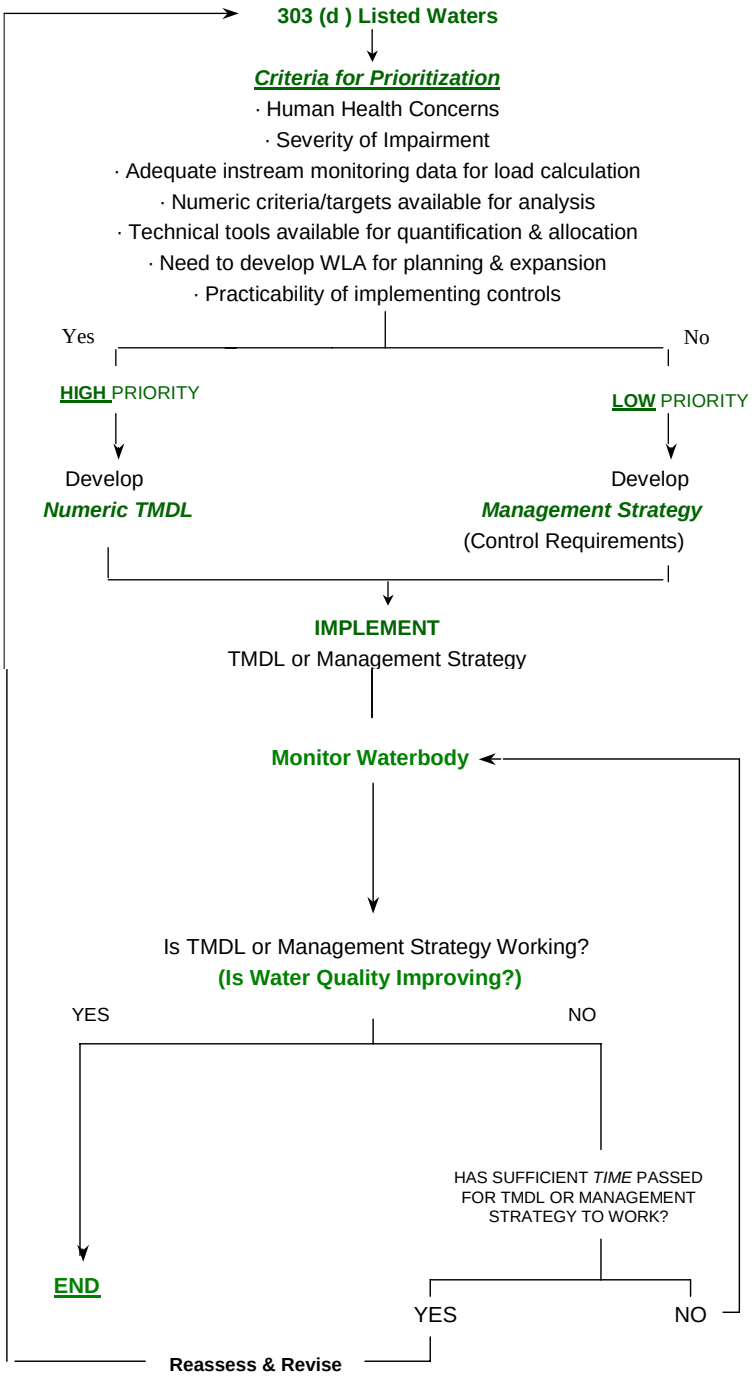

Figure 6-3. Prioritization scheme for TMDL Development.

6.3.B. Nonpoint Sources

Common nonpoint sources of pollution include urban runoff, riparian vegetation removal, and inappropriate land development, agricultural, and road construction practices. Since nonpoint pollution exists essentially everywhere rain falls and drains to a stream, existing point source regulations can have only a limited effect, so other measures are necessary.

There are several state and federal regulations that address some of the contaminants impacting waters in the Pickwick Lake Watershed. Most of these are limited to only point sources: a pipe or ditch. Often, controls of point sources are not sufficient to protect waters, so other measures are necessary. Some measures include voluntary efforts by landowners and volunteer groups, while others may involve new regulations. Many agencies, including the Tennessee Department of Agriculture and NRCS, offer financial assistance to landowners for corrective actions (like Best Management Practices) that may be sufficient for recovery of impacted streams. Many nonpoint problems will require an active civic involvement at the local level geared towards establishment of improved zoning guidelines, building codes, streamside buffer zones and greenways, and general landowner education.

The following text describes certain types of impairments, causes, suggested improvement measures, and control strategies. The suggested measures and streams are only examples and efforts should not be limited to only those streams and measures mentioned.

6.3.B.i. Sedimentation.

6.3.B.i.a. From Construction Sites. Construction activities have historically been considered “nonpoint sources.” In the late 1980’s, EPA designated them as being subject to NPDES regulation if more than 5 acres are disturbed. In the spring of 2003, that threshold became 1 acre. The general permit issued for such construction sites sets out conditions for maintenance of the sites to minimize pollution from stormwater runoff, including requirements for installation and inspection of erosion controls. Also, the general permit imposes more stringent inspection and self-monitoring requirements on sites in the watershed of streams that are already impaired due to sedimentation. Regardless of the size, no construction site is allowed to cause a condition of pollution.

Construction sites within a sediment-impaired watershed may also have higher priority for inspections by WPC personnel, and are likely to have enforcement actions for failure to control erosion. Examples of these streams are Shoal Creek and Little Shoal Creek.

The same requirements apply to sites in the drainage of high quality waters. Cypress Creek and Bluewater Creek are examples of high quality streams in the Pickwick Lake watershed.

6.3.B.i.b. From Channel and/or Bank Erosion. Methods or controls that might be necessary to address common problems are:

Voluntary activities

- Re-establishment of bank vegetation (examples: Little Shoal Creek and Grassy Creek).
- Establish off channel watering areas for cattle by moving watering troughs and feeders back from stream banks.
- Limit cattle access to streams and bank vegetation.

Additional strategies

- Increase efforts in the Master Logger program to recognize impaired streams and require more effective management practices.
- Community planning for the impacts of development on small streams.
- Restrictions requiring post construction run-off rates to be no greater than pre-construction rates in order to avoid in-channel erosion.
- Additional restrictions on logging in streamside management zones.
- Prohibition on clearing of stream and ditch banks. *Note: Permits may be required for any work along streams.*
- Additional restriction to road and utilities crossings of streams.
- Restrictions on the use of off-highway vehicles on stream banks and in stream channels.

6.3.B.i.c. From Agriculture and Silviculture. Even though there is an exemption in the Water Quality Control Act stating that normal agricultural and silvicultural practices that do not result in a point source discharge do not have to obtain a permit, efforts are being made to address impacts due to these practices.

The Master Logger Program has been in place for several years to train loggers how to plan their logging activities and to install Best Management Practices that lessen the impact of logging activities. Recently, laws and regulations were enacted which established the expected BMPs to be used and allows the Commissioners of the Departments of Environment and Conservation and of Agriculture to stop a logging operation that has failed to install these BMPs and so are impacting streams.

Since the Dust Bowl era, the agriculture community has strived to protect the soil from wind and soil erosion. Agencies such as the Natural resources Conservation Service (NRCS), the University of Tennessee Agricultural Extension Service, and the Tennessee department of Agriculture have worked to identify better ways of farming, to educate the farmers, and to install the methods that address the sources of some of the impacts due to agriculture. Cost sharing is available for many of these measures. Shoal Creek, Little Shoal Creek, and Grassy Creek could all benefit from agricultural BMPs.

6.3.B.ii. Pathogen Contamination.

Possible sources of pathogens are inadequate or failing septic tank systems, overflows or breaks in public sewer collection systems, poorly disinfected discharges from sewage treatment plants, and fecal matter in streams and storm drains due to pets, livestock and wildlife. Permits issued by the Division of Water Pollution Control regulate discharges from point sources and require adequate control for these sources. Individual homes are required to have subsurface, on-site treatment (i.e., septic tank and field lines) if public sewers are not available. Septic tank and field lines are regulated by the Division of Ground Water Protection within TDEC and delegated county health departments. In addition to discharges to surface waters, businesses may employ either subsurface or surface disposal of wastewater. The Division of Water Pollution Control regulates surface disposal.

Other measures that may be necessary to control pathogens are:

Voluntary activities

- Off-channel watering of livestock (example: Shoal Creek).
- Limiting livestock access to streams.
- Proper management of animal waste from feeding operations.

Enforcement strategies

- Greater enforcement of regulations governing on-site wastewater treatment (example: Shoal Creek).
- Timely and appropriate enforcement for non-complying sewage treatment plants, large and small, and their collection systems.
- Identification of Concentrated Animal Feeding Operations not currently permitted, and enforcement of current regulations.

Additional strategies

- Restrict development in areas where sewer is not available and treatment by subsurface disposal is not an option due to poor soils, floodplains, or high water tables.
- Develop and enforce leash laws and controls on pet fecal material.
- Greater efforts by sewer utilities to identify leaking lines or overflowing manholes.

6.3.B.iii. Excessive Nutrients and/or Dissolved Oxygen Depletion.

These two impacts are usually listed together because high nutrients often contribute to low dissolved oxygen within a stream. Since nutrients often have the same source as pathogens, the measures previously listed can also address many of these problems. Elevated nutrient loadings are also often associated with urban runoff from impervious surfaces and from fertilized lawns and croplands.

Other sources of nutrients can be addressed by:

Voluntary activities

- Encourage no-till farming.

- Encourage cattle exclusion and riparian restoration practices (example: Shoal Creek).
- Encourage farmers to use the proper rate of fertilizer for the soil and crop.
- Educate homeowners and lawn care companies in the proper application of fertilizers.
- Encourage landowners, developers, and builders to leave stream buffer zones. Streamside vegetation can filter out many nutrients and other pollutants before they reach the stream. These riparian buffers are also vital along livestock pastures.
- Use grassed drainage ways that can remove fertilizer before it enters streams.
- Use native plants for landscaping since they don't require as much fertilizer and water.

Physical changes to streams can prevent them from providing enough oxygen to biodegrade the materials that are naturally present. A few additional actions can address this problem:

- Maintain shade over a stream. Cooler water can hold more oxygen and retard the growth of algae.
- Discourage impoundments. Ponds and lakes do not aerate water. *Note: Permits may be required for any work on a stream, including impoundments.*

6.3.B.iv. Toxins and Other Materials.

Many materials enter our streams due to apathy, or lack of civility or knowledge by the public. Litter in roadside ditches, garbage bags tossed over bridge railings, paint brushes washed off over storm drains, and oil drained into ditches are all examples of pollution in streams. Some can be addressed by:

Voluntary activities

- Providing public education.
- Painting warnings on storm drains that connect to a stream.
- Sponsoring community clean-up days.
- Landscaping of public areas.
- Encouraging public surveillance of their streams and reporting of dumping activities to their local authorities.

Needing regulation

- Prohibition of illicit discharges to storm drains.
- Litter laws and strong enforcement at the local level.

6.3.B.v. Habitat Alteration.

The alteration of the habitat within a stream can have severe consequences. Whether it is the removal of the vegetation providing a root system network for holding soil particles together, the release of sediment, which increases the bed load and covers benthic life and fish eggs, the removal of gravel bars, "cleaning out" creeks with heavy equipment,

or the impounding of the water in ponds and lakes, many alterations impair the use of the stream for designated uses. Habitat alteration also includes the draining or filling of wetlands.

Measures that can help address this problem are:

Voluntary activities

- Sponsoring litter pickup days to remove litter that might enter streams.
- Organizing stream cleanups removing trash, limbs and debris before they cause blockage.
- Avoiding use of heavy equipment to “clean out” streams.
- Planting vegetation along streams to stabilize banks and provide habitat (examples: Shoal Creek and Grassy Creek).
- Encouraging developers to avoid extensive culverts in streams.

Current regulations

- Restrict modification of streams by such means as culverting, lining, or impounding.
- Require mitigation for impacts to streams and wetlands when modifications are allowed.
- Increase frequency of ARAP inspections (examples: Shoal Creek and Grassy Creek).

Additional Enforcement

- Increased enforcement may be needed when violations of current regulations occur.

6.4. PERMIT REISSUANCE PLANNING

Under the *Tennessee Water Quality Control Act*, municipal, industrial and other dischargers of wastewater must obtain a permit from the Division. Approximately 1,700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES). These permits establish pollution control and monitoring requirements based on protection of designated uses through implementation of water quality standards and other applicable state and federal rules.

The following three sections provide specific information on municipal, industrial, and water treatment plant active permit holders in the Pickwick Lake Watershed. Compliance information was obtained from EPA's Permit Compliance System (PCS). All data was queried for a five-year period between January 1, 2001 and December 31, 2006. PCS can be accessed publicly through EPA's Envirofacts website. This website provides access to several EPA databases to provide the public with information about environmental activities that may affect air, water, and land anywhere in the United States:

http://www.epa.gov/enviro/html/ef_overview.html

Stream Segment information, including designated uses and impairments, are described in detail in Chapter 3, *Water Quality Assessment of Pickwick Lake Watershed*.

6.4.A. Municipal Permits

TN0022551 Lawrenceburg STP

Discharger rating: Major
City: Lawrenceburg
County: Lawrence
EFO Name: Columbia
Issuance Date: 2/27/04
Expiration Date: 10/31/07
Receiving Stream(s): Shoal Creek mile 55.4
HUC-12: 060300050303
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Biologically-treated municipal wastewater

Segment	TN06030005082_1000
Name	Shoal Creek
Size	2.3
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Nitrates, Sedimentation/Siltation, Escherichia coli
Sources	Industrial Point Source Discharge, Municipal Point Source Discharges, Non-irrigated Crop Production, Grazing in Riparian or Shoreline Zones, Site Clearance (Land Development or Redevelopment), Sanitary Sewer Overflows (Collection System Failures)

Table 6-1. Stream Segment Information for Lawrenceburg STP

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Ag (T)	All Year	0.005	mg/L	MAvg Conc	Monthly	Composite	Effluent
Ag (T)	All Year	0.1	lb/day	MAvg Load	Monthly	Composite	Effluent
Ammonia as N (Total)	All Year	4	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	10	mg/L	DMax Conc	3/Week	Composite	
Ammonia as N (Total)	All Year	63	lb/day	DMax Load	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	5	mg/L	WAvg Conc	3/Week	Composite	
Ammonia as N (Total)	All Year	2	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	156	lb/day	DMax Load	3/Week	Composite	
Ammonia as N (Total)	All Year	3	mg/L	MAvg Conc	3/Week	Composite	Effluent

Table 6-2a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	42	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	104	lb/day	MAvg Load	3/Week	Composite	
Ammonia as N (Total)	All Year	7.5	mg/L	MAvg Conc	3/Week	Composite	
Bypass of Treatment (occurrences)	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Wet Weather
CBOD % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	All Year	20	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	All Year	10	mg/L	DMin Conc	3/Week	Composite	Effluent
CBOD5	All Year	15	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	All Year	313	lb/day	DMax Load	3/Week	Composite	Effluent
CBOD5	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year	209	lb/day	MAvg Load	3/Week	Composite	Effluent
Cu (T)	All Year	0.031	mg/L	MAvg Conc	Monthly	Composite	Effluent
Cu (T)	All Year	0.65	lb/day	MAvg Load	Monthly	Composite	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	3/Week	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
IC25 7day Ceriodaphnia Dubia	All Year	18	Percent	DMin Conc	Monthly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	18	Percent	DMin Conc	Monthly	Composite	Effluent
NOEL 7day Ceriodaphnia Dubia	All Year	22	Percent	DMin Conc	Quarterly	Composite	Effluent
NOEL 7day Fathead Minnows	All Year	22	Percent	DMin Conc	Quarterly	Composite	Effluent
Nitrogen Total (as N)	All Year		mg/L	DMax Conc	Weekly	Composite	Effluent
Nitrogen Total (as N)	All Year		mg/L	MAvg Conc	Weekly	Composite	Effluent
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Non Wet Weather
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Wet Weather
Phosphorus, Total	All Year		mg/L	DMax Conc	Weekly	Composite	Effluent
Phosphorus, Total	All Year		mg/L	MAvg Conc	Weekly	Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	3/Week	Composite	Effluent
TRC	All Year	0.11	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	834	lb/day	DMax Load	3/Week	Composite	Effluent
TSS	All Year	40	mg/L	MAvg Conc	3/Week	Composite	Effluent

Table 6-2b.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	626	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	30	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-2c.

Tables 6-2a-c. Permit Limits for Lawrenceburg STP.

Compliance History:
The following numbers of exceedences were noted in PCS:

- 9 TSS
- 5 Settleable Solids
- 6 Ammonia
- 37 CBOD
- 6 Fecal Coliform
- 9 Suspended Solids % Removal
- 5 Chlorine
- 2 Silver
- 1 COD
- 70 Overflows
- 84 bypasses

Enforcement:
Commissioner's Order #03-0556
Database Notes: Significant Non Compliance (SNC) status for nine consecutive quarters on the Quality Non Compliance Report (QNCR) for CBOD violations. Order also includes effluent violations for TSS, Ammonia, Settleable Solids, Fecal, and WET failures during March 2001-March 2003. 55 bypass or overflow events were also reported but were not assessed penalties because they were complying with a previous order on the collection system.
11/6/03 Consent Order signed.
10/17/06 Spoke with Lisa Porter at the STP and she told me that the new plant came online September 6, 2006. They are also sending written notice of the start-up.
10/19/06 Letter rec. from Lawrenceburg requesting that the order be lifted since they have met all their requirements.
11/8/06 Letter sent to Lawrenceburg re: Their request to lift order. Request denied due to on-going effluent violation. They have until December to meet permit limits.

EFO Comments:
None.

TN0065501 Loretto STP

Discharger rating: Minor
City: Loretto
County: Lawrence
EFO Name: Columbia
Issuance Date: 12/31/02
Expiration Date: 4/30/07
Receiving Stream(s): Shoal Creek at mile 38
HUC-12: 060300050303
Effluent Summary: Treatment of municipal sewage. Permitting reuse of treated effluent for golf course irrigation.
Treatment system: Lagoon

Segment	TN06030005081_1000
Name	Shoal Creek
Size	21.3
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Livestock Watering and Wildlife (Supporting), Recreation (Not Assessed), Industrial Water Supply (Supporting), Domestic Water Supply (Supporting), Irrigation (Supporting)
Causes	Nitrates, Sedimentation/Siltation
Sources	Industrial Point Source Discharge, Municipal Point Source Discharges, Site Clearance (Land Development or Redevelopment)

Table 6-3. Stream Segment Information for Highland Rim School.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Ammonia as N (Total)	All Year		mg/L	DMax Conc	Weekly	Grab	Effluent
Ammonia as N (Total)	All Year		lb/day	DMax Load	Weekly	Grab	Effluent
Ammonia as N (Total)	All Year		mg/L	MAvg Conc	Weekly	Grab	Effluent
Ammonia as N (Total)	All Year	28	mg/L	WAvg Conc	Weekly	Grab	Effluent
Ammonia as N (Total)	All Year	28	lb/day	MAvg Load	Weekly	Grab	Effluent
CBOD % Removal	All Year	65	Percent	MAvg % Removal	Weekly	Calculated	% Removal
CBOD5	All Year	60	mg/L	DMax Conc	Weekly	Grab	Effluent
CBOD5	All Year	113	lb/day	DMax Load	Weekly	Grab	Effluent
CBOD5	All Year	94	lb/day	DMax Load	Weekly	Grab	Effluent
CBOD5	All Year	50	mg/L	MAvg Conc	Weekly	Grab	Effluent
CBOD5	All Year	75	lb/day	MAvg Load	Weekly	Grab	Effluent
CBOD5	All Year	40	mg/L	DMin Conc	Weekly	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Weekly	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	Weekly	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	Weekly	Grab	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	1.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	120	mg/L	DMax Conc	Weekly	Grab	Effluent

Table 6-4a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	225	lb/day	DMax Load	Weekly	Grab	Effluent
TSS	All Year	206	lb/day	DMax Load	Weekly	Grab	Effluent
TSS	All Year	110	mg/L	MAvg Conc	Weekly	Grab	Effluent
TSS	All Year	188	lb/day	MAvg Load	Weekly	Grab	Effluent
TSS	All Year	100	mg/L	WAvg Conc	Weekly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-4b.

Tables 6-4a and b. Permit Limits for Loretto STP.

Compliance History:
The following numbers of exceedences were noted in PCS:

- 3 CBOD
- 2 overflows

EFO Comments:
None.

6.4.B. Industrial Permits

TN0001872 UCAR Carbon Company Inc.

Discharger rating: Minor
City: Lawrenceburg
County: Lawrence
EFO Name: Columbia
Issuance Date: 1/02/02
Expiration Date: 1/01/07
Receiving Stream(s): Unnamed tributary at mile 0.62 to Shoal Creek at mile 51.9 for Outfall 001 and Redding Branch for Outfall SW1
HUC-12: 060300050303
Effluent Summary: Contact and noncontact cooling water, storm water runoff and treated domestic wastewater through Outfall 001 and storm water runoff through Outfall SW1
Treatment system: -

Segment	TN06030005081_0999
Name	Misc Tribs to Shoal Creek
Size	26.8
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Not Assessed), Recreation (Not Assessed), Irrigation (Not Assessed), Livestock Watering and Wildlife (Not Assessed)
Causes	N/A
Sources	N/A

Table 6-5. Stream Segment Information UCAR Carbon Company Inc.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Ammonia as N (Total)	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	Semi-annually	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	28	mg/L	DMax Conc	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	14	mg/L	MAvg Conc	Monthly	Grab	Effluent
TSS	All Year	49	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	MAvg Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-6. Permit Limits for UCAR Carbon Company Inc.

Compliance History:
None Reported.

EFO Comments:
Manufacture of Carbon Brick primarily for the steel industry and Metal Ceramics Refractories for high temperature applications.

6.4.B. Water Treatment Plant Permits

TN0078794 Saint Joseph Water Treatment Plant

Discharger rating: Minor
City: St. Joseph
County: Lawrence
EFO Name: Columbia
Issuance Date: 10/05/05
Expiration Date: 9/29/09
Receiving Stream(s): Little Bluewater Creek
HUC-12: 060300050201
Effluent Summary: Filter backwash and/or sedimentation basin washdown from Outfall 001
Treatment system: Lime, chlorine, aqua mag, and fluorosilicic acid

Segment	TN06030005074_0100
Name	Little Bluewater Creek
Size	8.5
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Recreation (Not Assessed), Fish and Aquatic Life (Supporting)
Causes	N/A
Sources	N/A

Table 6-7. Stream Segment Information for Saint Joseph Water Treatment Plant.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Al (T)	All Year	0.75	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year	0.019	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	Percent	DMin % Removal	3/Week	Composite	Effluent
pH	All Year	6.5	SU	DMin Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent

Table 6-8. Permit Limits for Saint Joseph Water Treatment Plant.

EFO Comments:
Turbidity removal WTP